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10/671,343	09/25/2003	Shawn Joseph Baranczyk	ROC920030213US1	7069

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EXAMINER
HOMAYOUNMEHR, FARID

ART UNIT	PAPER NUMBER
2139	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _06 February 2008_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
     closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-11,13-24 and 26-29_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-11, 13-24, 26-29_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
          application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   Paper No(s)/Mail Date. _____.
3)☐ Information Disclosure Statement(s) (PTO/SB/08)   5)☐ Notice of Informal Patent Application
     Paper No(s)/Mail Date _____.   6)☐ Other: _____.

DETAILED ACTION

1.   In view of the Appeal Brief filed on 2/6/2008, PROSECUTION IS HEREBY

REOPENED. The new grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following

two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37

CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an

appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal

brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37

CFR 41.20 have been increased since they were previously paid, then appellant must

pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by

signing below:

/Kristine Kincaid/

Supervisory Patent Examiner, Art Unit 2139

Kristine Kincaid.

2.   Claims **1-11, 13-24, 26-29** have been examined. Claims 12 and 25 are cancelled.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

4.   Claim 29 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

Claim 29 is directed to "a recordable computer readable medium storing the

program code." The Specification does not define "a recordable computer readable

medium", and it is not clear what is generally meant by that phrase. Note that the

Specification defines "recordable type media".

Claim Rejections - 35 USC § 101

5.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

6.   Claim 29 is rejected as being directed to non-statutory subject matter. Claim 29

recites a program product comprising a program code and "a recordable computer

readable medium". The specification does not clearly specify "a recordable computer

readable medium", and it is not clear if it encompasses signals, or transmission

mediums. The Specification, defines a "recordable type media". Therefore, replacing "a

recordable computer readable medium" with "recordable type media" would meet the

statutory requirements.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-3, 6-10, 14-15, 16, 19-23, 27-29 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Chan (US Patent No. 5,713,018, dated Jan. 27, 1998), in view

of Urano (US Patent No. 6,289,379, dated Sep. 11, 2001).

In reference to claim 1:

Chan discloses a method of executing a query in a database management system, the

method comprising:

•   Receiving an SQL statement from an application program coupled to the

database management system, where the SQL statements are received from a client

through the clients' DBMS access program. (Column 2, lines 48-67)

•   Executing the SQL program. (Column 1, lines 65-67)

•   Encrypting the SQL statement to generate an encrypted representation of the

SQL statement, where the SQL is encrypted into an encrypted SQL string. (Chan

Column 3, lines 11-51 shows encryption of SQL statements by the client to secure the

statements from access by an unauthorized user.)

•   Chan however, does not explicitly teach logging execution of the SQL statement

in a database monitor by storing the encrypted representation of the SQL statement in

an execution log managed by the database monitor. Urano teaches a system, collecting

log information for monitoring computer systems (see abstract, col. 1 lines 9-11, col. 1

lines 60-68, or col. 4 lines 44 to 52.). Urano col. 7 lines 35 to 41 also teach an

embodiment that includes encrypting the execution records before logging them to

protect the logs. Therefore, Urano teaches a monitoring system that encrypts execution

records and logs them for the purpose of monitoring computer systems.

Chan and Urano are analogous art, as they are both directed to protection and secure

access to information in computer systems. At the time of invention, it would have been

obvious to the one skilled in art to enhance Chan's database management system,

which uses SQL statements to submit database commands and return the result of the

commands to the client, by encrypting and logging the execution results (SQL

statements), as suggested by Urano. Note that Chan already teaches the one skilled in

art how to encrypt the SQL statements. Also note that Chan verifies (monitors) SQL

commands for their validity before execution and returning the SQL commands to the

client (See Chan Fig. 4 and associated text, particularly, items 254, 256, and 258). The

motivation to combine would be monitoring the operations of Chan's server computer

and collecting and logging execution records. The execution records are useful for

detecting errors or attacks (as they describe the events related to execution process),

and reporting them for mitigation, as suggested by, for example, Urano col. 7 lines 27

to 35 60 to col. 2 line 45.)

•   displaying the execution log, including retrieving the encrypted

representation of the SQL statement from the execution log, decrypting the

encrypted representation of the SQL statement to generate an unencrypted

representation of the SQL statement, and displaying the unencrypted representation

of the SQL statement (Urano col. 7 line 60 to col. 8 line 2 teaches decryption and

display of logs to the administrator for the purpose of error or attack detection.

Therefore, the combination teaches decrypting the SQL statements and displaying them

to the Administrator.)

In reference to claim 2:

 Chan in view of Urano (Chan Column 3, lines 12-37) discloses the method of claim 1,

further Comprising encrypting at least one value passed to one of host variable and a

parameter marker used by the SQL statement, wherein logging execution of the SQL

statement further comprises storing the encrypted value in the execution log, where the

SQL statement is the value passed to the host variable, the encrypted SQL string also

known as the constant string (Chan Column 3, lines 50-55) and the parameter markers

which are used for the arguments. Note also that Urano teaches encrypting the log

records, which would include the entire SQL statement.

In reference to claim 3:

Requirements of claim 3 are substantially the same as requirements of claim 1.

In reference to claim 6:

Chan in view of Urano discloses the method of claim 3, wherein generating the

encrypted representation is performed prior to communicating the query to the database

management system (Chan teaches encrypting the SQL statements by client before

they are communicated to the server.)

In reference to claim 7:

Chan (Column 3, lines 12-60) discloses the method of claim 3, wherein the execution

detail comprises a query Statement, where the query statement is the SQL or

"structured query" statement.

In reference to claim 8:

Chan in view of Urano discloses the method of claim 3, wherein the execution detail

comprises a value passed to a host variable during execution of the query (Column 3,

lines 12-60, where the host variable is the encrypted SQL string, and the value passed

to the variable is the value of the function Encrypt()).

In reference to claim 9:

Chan in view of Urano discloses the method of claim 3, wherein the execution detail

comprises a value passed to a host variable during execution of the query (Column 3,

lines 12-60, where the host variable is the encrypted SQL string, and the value passed

to the variable is the value of the function Encrypt()).

In reference to claim 10:

Chan in view of Urano discloses the method of claim 3, further comprising logging a

second execution detail for the query in the execution log in an unencrypted

representation (Urano teaches two embodiments, one before col. 7 line 35, which does

not encrypt the logged execution records, and another embodiment, detailed after col. 7

line 35, in which the logged records are encrypted. Therefore, it makes it obvious to the

one skilled in art to create one encrypted set of logged records, and another

unencrypted set of logged records. In fact, an unencrypted set of logged records must

be created before an encrypted set can be generated by encrypting the unencrypted

set).

In reference to claim 14:

Chan in view of Urano discloses the method of claim 3, further comprising determining if

database monitoring is enabled in the database management system, wherein

generating the encrypted representation is performed if it is determined that database

monitoring is enabled (Urano at col. 4 lines 30 to 52 teach the option that allows a

selection of log files to be collected and sent for analysis and eventually encrypted.

Therefore it teaches an enablement feature that when activated causes encryption of the logs.

In reference to claim 15:

Chan in view of Urano discloses the method of claim 3, wherein the query comprises an SQL statement (Chan column 3, lines 12-60 shows that SQL statements are used for database query).

In reference to claim 16, 19-23, 27-29:

Requirements of claims 16, 19-23, 27-29 are substantially the same as claims 1-3, 6-10, 12, and 14-15 above.

9.   Claims 4-5, 11, 13, 17, 18, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan (US Patent No. 5,713,018, dated Jan. 27, 1998), in view of Urano (US Patent No. 6,289,379, dated Sep. 11, 2001), and further in view of Examiner's Official Notice.

In reference to claim 4:

Chan in view of Urano fails to explicitly disclose the method of claim 3, further comprising receiving the query in an unencrypted form from an application program in communication with the database management system.

However, the Examiner takes official notice that receiving an SQL query in unencrypted

form was well known at the time of the invention. In fact it was the state of the prior art.

Chan attempts to provide some measure of security in executing SQL statements by a

DBMS. The prior art comprises transmitting and receiving these commands in

unencrypted form.

It would have been obvious to one of ordinary skill in the art at the time of invention to

add the teaching of receiving the query in unencrypted form in order to provide the

advantage of speeding up processing and execution times without the added overhead

of implemented security, to the modified method of Chan in view of Urano.

In reference to claim 5:

Chan in view of Urano discloses the method of claim 4, wherein generating the

encrypted representation is performed after communicating the query to the database

management system. As discussed in reference to claim 1, the combination of Chan in

view of Urano teaches encrypting the execution logs. Therefore, the SQL statements

are executed before they are encrypted. Note that the SQL queries are communicated

before they are executed.

In reference to claim 11 :

Chan in view of Urano discloses the method of claim 10, wherein the second execution

detail includes at least one of an access plan and a performance statistic associated

with execution of the query . Examiner takes the Official Notice that generating

performance statistics associated with execution of programs and queries was well-

known in the art at the time of invention. Urano teaches a system that collects logs related to execution process for the purpose of error detection and trouble shooting. It would have been obvious to the one skilled in art to produce performance statistics and log it as execution process related information, and add this feature to the combination of Chan over Urano. The motivation would be to enhance the error correction and trouble shooting capabilities by including performance statistic information. Access plan is also a well-known attribute related to execution process. It would have been obvious to the one skilled in art to include access plan information in the set of parameters of the combination of Chan over Urano. The motivation would be to allow implementation of security features to control access to programs. Note further that Applicant's Appeal Brief in page 19 admits that performance statistics and Access Plan are well-known in the art.

In reference to claim 13:

Chan (Column 3, lines 35-50) discloses encryption with the private key and decryption with the public key, but Chan in view of Urano fails to explicitly disclose encrypting the execution detail using a public key, and wherein the program code is configured to decrypt the execution detail by decrypting the execution detail using a private key paired with the public key.

The examiner takes official notice that public key cryptography was well known to those of ordinary skill in the art at the time of invention. Public key cryptography encrypts with

the public key and decrypts with the private key. The method Chan is advocating is a

digital signature algorithm which encrypts with a private key and decrypts with the public

key.

It would have been obvious to one of ordinary skill in the art at the time of invention to

encrypt the SQL code with the public key and decrypt with the private key, and modify

the teachings of Chan in view of Urano accordingly. The motivation to do so would be

to establish the secrecy such that only the person with the private key would be able to

read and decipher the query.

In reference to claims 17, 18, 24, and 26:

Requirements of claims 17, 18, 24, and 26 are substantially the same as claims 4, 5,

11, and 13 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Farid Homayounmehr whose telephone number is 571

272 3739. The examiner can normally be reached on 9 hrs Mon-Fri, off Monday

biweekly.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kristine Kincaid can be reached on (571) 272-4063. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

Farid Homayounmehr

Examiner

Art Unit: 2139

/Kristine Kincaid/
Supervisory Patent Examiner, Art Unit 2139